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(54) **DATA-CENTRIC MULTI-LEVEL BLOCKING**

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(51) Int. Cl.<sup>7</sup> ..... **G06F 9/45**

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(58) Field of Search ..... **717/9**

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(57) **ABSTRACT**

A framework for improving program performance by  
locality-enhancing transformations is presented. This framework  
is appropriate for modern high-performance machines  
that have a memory hierarchy. The invention orchestrates  
the flow of data through the memory hierarchy directly, and  
is thus able to overcome limitations of existing approaches.  
This new approach allows for efficient execution of imperfectly  
nested loop programs which are ubiquitous in numerical  
calculations and database operations, and it can be  
integrated into high-performance optimizing compilers.

**12 Claims, 7 Drawing Sheets**

